



Australian Government

Department of Education, Employment and Workplace Relations

ICTSUS6233A Integrate sustainability in ICT planning and design projects

Release: 1

ICTSUS6233A Integrate sustainability in ICT planning and design projects

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	<p>This unit describes the performance outcomes, skills and knowledge required to integrate sustainability concepts and policies into ICT planning and design projects. It involves accessing industry information and applying legislative and occupational health and safety (OHS) guidelines.</p> <p>No licensing, legislative, regulatory or certification requirements apply to this unit at the time of endorsement but users should confirm requirements with the relevant federal, state or territory authority.</p>
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Application of the Unit

Application of the unit	<p>Technical managers, supervising technicians, project managers, consultants or contractors in organisations conducting ICT planning or design projects apply the skills and knowledge in this unit.</p> <p>Typical ICT projects involve upgrades of equipment hardware and software or new installations of Next Generation Networks (NGN) using emerging technologies.</p>
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Licensing/Regulatory Information

Refer to Unit Descriptor

Pre-Requisites

Prerequisite units		

Employability Skills Information

Employability skills	This unit contains employability skills.
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Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
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Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare to integrate sustainability into the planning and design stages of an ICT project	1.1. Evaluate suitable ICT projects into which sustainability can be integrated 1.2. Negotiate with the stakeholders to establish the extent to which sustainability is to be integrated 1.3. Research and identify suitable technology solutions applicable to the project 1.4. Gather power consumption data on ICT equipment required for an energy audit based on an agreed standard
2. Devise strategies for incorporating sustainability into an ICT project	2.1. Determine and oversee implementation of short term technology solutions to achieve reduction of power consumption 2.2. Initiate and progress sustainable management principles which result in reduced environmental impact 2.3. Establish, regularly review and improve key performance indicators (KPI) on sustainability performance 2.4. Incorporate innovative planning and design rules for ICT projects which foster sustainability and environmental best practice
3. Analyse energy audit data	3.1. Identify energy usage within the scope of the ICT project and provide a detailed report 3.2. Estimate potential energy savings and payback periods for recommended actions 3.3. Estimate the carbon dioxide (CO ₂) emissions for the nominated project 3.4. Evaluate the estimated CO ₂ emissions with comparable benchmarks 3.5. Make recommendations in order of priority and give estimates of implementation costs on integration of sustainability for other ICT projects

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

REQUIRED SKILLS AND KNOWLEDGE**Required skills**

- analytical skills to:
 - compare and evaluate effective technical solutions involving integration of sustainability
 - interpret technical specifications and related sustainability documentation
- communication skills to:
 - adjust communication to suit different audiences
 - liaise with customers to outline sustainability strategy benefits and how they can be incorporated into the project within specified timeframes
 - negotiate approvals and contract arrangements with suppliers and contractors
 - respond effectively to diversity
 - to consult on and validate policy
 - work as a member of a team
- literacy skills to:
 - document technical requirements and procedures
 - evaluate complex and formal documents such as policy and legislation
 - prepare written reports requiring precise expression, language and structures suited to the intended audience
- numeracy skills to:
 - analyse and confirm capacity requirements
 - calculate budget requirements and limitations
 - determine workforce requirements
 - estimate CO₂ emissions
- organisational skills to arrange relevant documentation and approvals
- planning and organisational skills to:
 - set out project requirements and priorities
 - make site access and equipment delivery arrangements
- problem solving skills to account for unexpected variations to requirements, and to effectively manage different points of view and dissenting stakeholders
- research skills to:
 - research and present information
 - gain and maintain relevant and current technical product knowledge
- technical skills to integrate sustainability into a technical project

Required knowledge

- best practice approaches relevant to own work area
- environmental or sustainability legislation, regulations and codes of practice applicable to industry and organisation
- equal employment opportunity, equity and diversity principles and OHS safety

REQUIRED SKILLS AND KNOWLEDGE

- implications of policy being developed
- estimated CO₂ emissions
- ICT power consumption calculations
- policy development processes and practices
- power consumption audit methodology
- principles, practices and available tools and techniques of sustainability management relevant to the telecommunications industry
- quality assurance systems relevant to own organisation
- relevant industry competence
- relevant organisational policies, procedures and protocols
- systems and procedures to aid in the achievement of workplace sustainability

Evidence Guide

EVIDENCE GUIDE	
The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.	
Overview of assessment	
Critical aspects for assessment and evidence required to demonstrate competency in this unit	<p>Evidence of the ability to:</p> <ul style="list-style-type: none"> plan and integrate sustainability into ICT projects by devising strategies to conserve resources analyse energy audit data on enterprise resource consumption develop and monitor policies for review and improvements, benchmarking against industry best practice and attempting new approaches continuously over time.
Context of and specific resources for assessment	<p>Assessment must ensure:</p> <ul style="list-style-type: none"> sites on which planning, design and integration of sustainability may be carried out relevant legislation, standards, guidelines, reports and equipment specifications and drawings range of workplace documentation, personnel, information and resources: <ul style="list-style-type: none"> compliance obligations organisational plans work responsibilities.
Method of assessment	<p>A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate for this unit:</p> <ul style="list-style-type: none"> direct observation of the candidate analysing energy audit data review of policy developed and procedural documentation completed by the candidate outlining the approach taken review of implementation strategy, plans and work plans completed by the candidate evaluation of methods used to involve stakeholders in policy development, implementation and review.
Guidance information for assessment	Holistic assessment with other units relevant to the industry sector, workplace and job role is recommended,

EVIDENCE GUIDE

	<p>for example:</p> <ul style="list-style-type: none"> • ICTPMG6033A Develop project management plan • ICTPMG6034A Prepare a detailed design brief • ICTTEN6206A Produce an ICT network architecture design. <p>Aboriginal people and other people from a non-English speaking background may have second language issues.</p> <p>Access must be provided to appropriate learning and assessment support when required.</p> <p>Assessment processes and techniques must be culturally appropriate, and appropriate to the oral communication skill level, and language and literacy capacity of the candidate and the work being performed.</p> <p>In all cases where practical assessment is used it will be combined with targeted questioning to assess required knowledge. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency.</p> <p>Where applicable, physical resources should include equipment modified for people with special needs.</p>
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Range Statement**RANGE STATEMENT**

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Projects may include:

- advanced meter infrastructure (AMI)

RANGE STATEMENT	
	<ul style="list-style-type: none"> • alternative energy cellular base station sites • equipment upgrades • introduction of new technology • passive optical network (PON) technology for fibre to the premises (FTTP) • smart grid partnerships • software upgrade.
<i>Stakeholders</i> may include:	<ul style="list-style-type: none"> • competitors • customers • employees • investors • media • regulators • society.
<i>ICT equipment</i> may include:	<ul style="list-style-type: none"> • data storage • firewall • multiplexer • printer • router • server • switch • telephone system • workstation.
<i>Energy audit</i> may refer to:	<ul style="list-style-type: none"> • AS/NZ 3598:2000: <ul style="list-style-type: none"> • Level 1 consumption benchmark • Level 2 preliminary assessment • Level 3 economic analysis.
<i>Agreed standard</i> may include:	<ul style="list-style-type: none"> • AS/NZ 3598:2000 (or latest revision) • BS EN 16001:2009 Energy Management Systems • ISO 14001:2004 Environment.
<i>Short term technology solutions</i> may include:	<ul style="list-style-type: none"> • energy efficient hardware • hibernation of: <ul style="list-style-type: none"> • hard drive • LCD monitor • workstation • multifunction devices • remote energy management • replacing desktop PCs with thin clients

RANGE STATEMENT	
	<ul style="list-style-type: none"> • server virtualisation • use of videoconference technology.
<i>Sustainable management principles</i> may include:	<ul style="list-style-type: none"> • audit waste management procedures • improving the energy efficiency of ICT network equipment: <ul style="list-style-type: none"> • reducing the need for air conditioning • shutting down equipment during low demand • supply chain: <ul style="list-style-type: none"> • driving ethical values through the supply chain • engaging supplier's involvement in emissions reporting and continual improvement • engaging suppliers who provide information on energy consumption and product lifecycles • influencing suppliers to provide energy efficient products and services • procurement strategies: <ul style="list-style-type: none"> • assessment of suppliers' environmental policies and procedures • lowering of energy consumption or environmental impact of replacement products or services • managing the environmental impacts of electrical and electronic equipment • use of energy consumption and environmental impact as criteria in the process of awarding contracts.
<i>Key performance indicators (KPIs)</i> may include:	<ul style="list-style-type: none"> • kg CO₂ emitted per floor area occupied in permanent buildings • kg CO₂ emissions from company car fleet • percentage of timber used in construction from well managed, sustainable sources • percentage volume of material from sustainable sources • reduction of quantity (in 1000's kg) of ozone depleting gases used in air-conditioning equipment.
<i>Energy usage</i> may include:	<ul style="list-style-type: none"> • a percentage of overall energy use in this

RANGE STATEMENT	
	project <ul style="list-style-type: none"> • individual equipment • location.
Detailed report may include:	<ul style="list-style-type: none"> • details of energy efficiency improvements • energy consumption records • energy saving practices and financial returns • energy use in graphical form • executive summary with recommendations • implementation costs • payback periods • review process • timelines.
Benchmarks may include:	<ul style="list-style-type: none"> • AccountAbility AA1000 Assurance Standard (2008) • BSI BenchMark • Carbon Disclosure Project (CDP) • Dow Jones Sustainability Index (DJSI) • Global Reporting Initiative (GRI) G3 guidelines (telecommunications sector supplement).

Unit Sector(s)

Unit sector	Telecommunications
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Co-requisite units

Co-requisite units		

Competency field

Competency field	Sustainability
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